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Indonesia's Small and Medium-Size Exporters and Their Support Systems

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In Indonesia, public institutions generally lack the commitment, resources, and flexibility needed to provide quality support to small and medium-size enterprises, and industry associations often lack the professionalism and accountability needed to gain their confidence. But public support can be useful for relatively simple services, such as support to organize local fairs, to facilitate participation in foreign fairs, or to use foreign private consultants.

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Summary findings

Berry and Levy survey a sample of 91 small or medium-size exporters of garments, rattan furniture, and carved wooden furniture (Jepara), and interview people in public and nonprofit agencies active about issues affecting small and medium-size enterprises (SMEs).

Indonesia's garment industry is dominated by entrepreneurs of Chinese descent and the Jepara industry by pribumi (Indonesian Malays); in rattan furniture, the two are reasonably equally mixed. About 75 percent of the entrepreneurs in garments and rattan furniture have some university education; less than half of those in the more traditional, skill-based Jepara industry do.

In most of the firms, international marketing was handled exclusively through private channels; that is also how most firms acquired technological capability. But such channels appeared to be more readily accessible by larger firms, by educated entrepreneurs, and by non-pribumi who could take advantage of the extended-family network that connects ethnic Chinese in the region. Relying exclusively on private channels means running the risk that participation in export markets will be limited to a relatively narrow base of entrepreneurs.

Pribumi and smaller firms relied heavily on collective marketing support provided with a "light touch" — for example, support for participation in trade fairs. The Ministry of Trade's international network of offices geared to providing information and facilitating transactions was of little use to the firms surveyed. Collective technology support also appeared to be somewhat more important for smaller, pribumi firms, although its impact was modest. Employing expatriates was a powerful mechanism for acquiring technological capability, especially in the rattan and garment sectors, although it was concentrated disproportionately among the non-pribumi entrepreneurs.

Indonesia's collective institutions suffer from pervasive organizational weaknesses that limit their ability to help broaden the base of private entrepreneurship in small and medium-size firms. Public institutions generally lack the commitment, resources, and flexibility needed to provide quality support to SMEs, and the industry associations often lack the professionalism and accountability needed to gain SMEs' confidence.

But public support can be useful when it involves relatively simple services, such as support to organize local fairs, to facilitate participation in fairs abroad, or to use foreign private consultants.

This paper — a product of the Finance and Private Sector Development Division, Policy Research Department — is part of a larger effort in the department to examine the impact of proactive intervention on SME performance. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Daniele Evans, room N9-055, extension 38526 (68 pages). December 1994.

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Albert Berry and Brian Levy

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1. INTRODUCTION

The goals of this paper are three-fold. One is to highlight the role and potential of a crucial class of economic actors -- dynamic small and medium enterprises (SMEs). Both in its industrial structure and its policy orientation, Indonesian industry has long been characterized by a "missing middle". Aggregate industrial structure is dualistic, with employment and output concentrated among large firms and micro-enterprises, and only modest contributions by SMEs. Special incentives, opportunities and subsidies have been provided to large business groups and to large-scale public industrial enterprises, and there has been a long series of programmatic and regulatory interventions in support of microenterprises. But dynamic and independent SMEs typically lack the political influence to enjoy the benefits of special incentives, and are too large for the assistance to microenterprises to be of much value. (Indeed, as will be seen, most dynamic SMEs do not emerge by graduating from the ranks of microenterprises). Yet the benefits to Indonesia of a broad base of dynamic, independent entrepreneurs would be substantial -- especially if pribumis comprised a significant share of these entrepreneurs, along with those of Chinese origin. A dynamic middle of entrepreneurship would help build a strong middle class that could increasingly immunize the society from the twin perils of rent-seeking by an unaccountable elite, and ethnic resentment leading to the implosion of a private-sector led development strategy in which non-pribumi are perceived to be the main beneficiaries.

A second goal is micro-level stocktaking. Analysis of trends in economic policies and performance over the duration of Indonesia's recent outward-oriented industrial surge has been abundant at the aggregate level. Yet surprisingly little is known as to what lies behind these aggregate statistics: who are the new export participants? how is industrial organization changing in the emerging sectors? what features of the micro-environment have been most supportive -- and most disruptive -- of export efforts? This section will provide detailed micro-level information (collected via firm surveys) on those aspects of industrial organization and the micro-environment for exporters that are of special relevance for SMEs.

A third goal is to evaluate micro-level policy for SMEs, especially for SME exporters. Indonesia's "first generation" of policy reforms focused appropriately on macro and trade policies. However, with the maturing of these micro-reforms the question arises as to whether micro-level policies and institutions are adequately supportive of SMEs. Particular attention will be given to the operation of marketing, technological and financial support systems for SMEs. Large enterprises typically have resources and functional skills within the firm to explore and exploit opportunities available in the market. But, lacking such resources and skills, SMEs may benefit significantly from support systems -- both private and public networks external to the firm -- to complement their internal efforts. The questions thus arise as to what have been the marketing, technological and financial support systems that have so far facilitated dynamism by Indonesia's SMEs, and whether the existing support systems are adequate to sustain SME dynamism in the future. This section will analyze the micro-environment for SME exporters, and suggest some reforms that could accelerate participation in Indonesia's manufactures export

boom of SME exporters in general, and smaller and pribumi exporters in particular.

The next section reviews the political economy background against which policy towards SMEs has been formulated. Section three describes the methodology for the in-depth analysis of SME exporters in three subsectors of industry. Section four provides an overview of each sector, who the SME exporters are, and how they have performed. Section five examines the mechanisms via which SMEs have penetrated export markets, and makes some recommendations as to the role of government in strengthening marketing support systems. Section six explores mechanisms and policies relevant to the acquisition by firms of the technological capability they need to compete. Section seven analyzes the financial support system for SME exporters and will incorporate some suggestions as to how it might be strengthened. Section eight concludes.

2. HISTORY, POLICY AND OTHER DETERMINANTS OF INDONESIA'S INDUSTRIAL STRUCTURE

The current patterns and many of the recent trends in Indonesia's industrial structure and in the place of SMEs within that structure, reflect a combination of deep-seated features of the society, related aspects of industrial policy and accidents of political and economic history (Robinson, 1985; McIntyre, 1990). The ethnic make-up of the society and the tensions associated therewith are often central to the story.

Manufacture in the colonial period consisted of household production, dominated by indigenous producers, small-scale and largely unmechanized manufacture dominated by the Chinese, and large scale production dominated by foreign capital. Until the 1930s most local manufacture took the first form.

But the indigenous producers gradually lost out to the larger mechanized factories controlled by foreign capital or, most often and most directly, the medium and small scale factories owned by the Chinese. Frequently the indigenous merchants and commodity producers organized politically in defense of their interests, but this resistance had at most a brief delaying effect, since the technologies to which they were tied were competitive only as long as capital was extremely scarce. While the Chinese met with much business and industrial success, they, like the indigenous groups, were unable to establish themselves as a national bourgeoisie. Their activities remained primarily mercantile in nature and family-based in structure.

At Independence the country's factory manufacturing sector was very small, local private capital was very limited, and the main reservoir of entrepreneurial talents lay in the Chinese community, not a group to which the new government would give the task of developing the industrial sector. Accordingly, the state became a major actor in industrial development in collaboration with the military, with politically powerful pribumi figures, with leading Chinese economic groups, and with foreign capital; the relative importance of these collaborating groups has varied according to time and circumstance. Until the reforms of the 1980s the manufacturing policy was protectionist and interventionist in character; the well-placed were the main beneficiaries of a highly patronage-based and rent-seeking system. On occasion marginal groups, usually under siege from an ongoing economic transition, were able to push the government to recognize their interests, but the resources channelled in their direction were always small in comparison to those reaching the in-group. When the oil boom relaxed fiscal constraints in the 1970s, substantial programs in support of microenterprise were developed;

only later and on a more modest scale was a credit program directed specifically at SMEs.

The vested interests of the powerful have been complemented by strong persistent strands of economic ideology in Indonesia favoring some or all of capital intensive industries, technologically advanced ones, and strategic ones (especially the engineering sector). Industrial policy has been characterized by marked swings, from xenophobia to a more liberal regime (end of the 1960s) to the grandiose plans of the early 1980s to the recent liberalism; elements of continuity have been the typically strong doses of pragmatism, nepotism, and dirigisme. The main groups purveying alternative strategies have been the "technocrats" at the Department of Finance and BAPPENAS, who tend to favour a market-oriented regime; the "nationalists", located in key line ministries like Trade and Industry, the powerful state secretariat and the vocal press, who have favored regulation, protection and more import substitution, partly reflecting the self-interest of specific groups and partly a deep mistrust of laissez faire, among whose various roots is the non-pribumi domination of much of the modern economy; and a somewhat amorphous group which advocates a bold strategy focused on large technology intensive projects designed to overcome the country's perceived backwardness, and involving a vision of an Indonesian industrial super-state (Hill, 1991, 21). The modern corporate economy is increasingly dominated by a number of large conglomerates with widely dispersed activities in industry and commerce, and some in plantations, real estate, and finance. Most have substantial offshore investments, especially in Singapore and Hong Kong. Though there has been special support over the years for pribumi business, it has had the effect more of channelling rents to this group than of building up its capital

and entrepreneurial base; 10 of the top 40 private groups are pribumi. Whether Chinese or pribumi, the large firms tend to owe their success in significant degree to their having good ties with the state, since the high degree of government involvement in regulation, protection, licensing, etc., and the corruption which typically goes with some of these functions make such ties mandatory for success. Most medium size firms are also Chinese, it appears, though here there appear to be no very accurate date. As our results will show, the Chinese firms tend to need less positive support from government since they are relatively well hooked into financial, marketing and informational networks of their ethnic group at the national or regional level; they do need "protection" from political and/or bureaucratic attack however. Medium and large pribumi tend to depend in a more positive way on government for special favours, for subsidized credit, etc., since they do not have an ethnic network on which they can draw as the Chinese do.

Much of the interest in micro- and small-scale industry (as opposed to middle-sized SMEs) has derived from the policy objectives of equity, promotion of pribumi firms and support for weak economic groups. Although successive Repelita have placed great rhetorical emphasis on this sector, most of the programs implemented have been less than impressive. With a high share of available capital channelled to the large, capital-intensive firms, those parts of the manufacturing sector producing at the other end of the size structure have traditionally had to make do with nothing but the tiny amounts of capital they themselves can accumulate. The highly touted sub-contracting programs and the foster-parent scheme have been "virtually shelved"[1]. Various

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[1]Hal Hill, "Indonesia's Industrial Transformation: Part II", Bulletin of Indonesian Economic Studies, Vol. 26, No. 3, December, 1990, 23.

targeted credit programs have been designed for small enterprise, including the costly and elaborate KIK AND KMKP credit schemes which have been gradually eliminated in the banking reforms since 1983. The recent SMIE project is the first line of credit directed especially to the middle-sized establishment; its impact has not been carefully assessed thus far, to the best of our knowledge.

Various other programs have been established to aid small industry, including industrial training and demonstration programs like the Textile Technology Institute in Bandung, and several Small Industry Centers (Hill, 1991, 46). Reservation schemes have been mooted but never introduced. Other measures have been in force periodically, such as a stipulation that state textile mills set aside a certain portion of their yarn, at specified prices, for small-scale weavers. Such assistance has often been nullified by other government policies which discriminate against small firms, such as the licensing system and the general level of corruption. The schemes tended also to be uncoordinated with each other.

Policy is now pro-trade and a powerful export lobby has for the first time emerged, demanding a commercial environment conducive to international competitiveness. The licenses, controls and protection under the jurisdiction of the Ministries of Industry and of Trade are now less central then before. Yet the outward oriented approach may or may not create the conditions for SMEs to make a stronger contribution than in the past, depending on how well its support needs are met. Amidst the rapid shifts of policy in recent years, and given the lack of a strong or articulate force lobbying on behalf of SMEs, it is easy to believe that its interests and needs might get short shrift. As

to the degree of success of pribumi business under the emerging new set of policies, only anecdotal evidence is thus far available.

3. DESIGN OF THE FIELD RESEARCH

Since available aggregate statistics throw little light on the character and potential for dynamism of Indonesia's SMEs, or on the micro-environment in which they operate, between January and June 1992 World Bank staff, together with members of the Institute for Economic and Social Research at the University of Indonesia, surveyed 91 SME exporters in three subsectors of manufacturing, and conducted intensive interviews with 30-40 public and non-profit agencies active in SME issues.

One reason for the choice of SME exporters as our object of study was the desire to learn more about the forces underlying Indonesia's export dynamism, whether and how it could be sustained over the longer-term, and who were the likely participants. A second, and more fundamental, reason was a desire to focus on the adequacy of the support environment from the perspective of successful SMEs; as discussed in the overview paper for the comparative research project of which this study is a part, participation in export markets can be a useful proxy for success. An obvious limitation of this research strategy is that it can shed little or no light on the micro-environment -- and the impact of government and other collective intervention on that environment -- for SMEs oriented towards the domestic market.

Since the character of SME support systems and the priority needs of firms depend in part on the specific features of individual subsectors, the research was organized around subsectoral analysis -- but with an effort to achieve as much diversity as possible in the characteristics of the selected

subsectors. The research initially focused on seven subsectors -- garments, carved wooden furniture, rattan furniture, shrimp cultivation, footwear, automobile components and textiles. However, exports of automobile components from Indonesia were virtually non-existent and, contrary to expectations (and the pattern in other countries) footwear and textile exports were dominated by large firms, with virtually no SME participation. Consequently, the field research was conducted in the garment, rattan furniture, and carved wooden furniture (specifically from Jepara) subsectors. The difficulty of identifying suitable candidates for the research implies that it would be mistaken to extrapolate from the results below and conclude that SME dynamism is ubiquitous in Indonesian industry.

For the garment and rattan studies, it was decided to survey firms in two sites (Jakarta and Bandung for garments, Jakarta and Surabaya for rattan); for carved wooden furniture, Jepara, a traditional center of wood carving in Indonesia, was chosen. These decisions having been taken, every effort was made to select the sample in as random a way as possible, and especially to work against a bias of including a disproportionate sample of firms that were contactable via public agencies or industry associations (and most likely to report favorably on their activities). Subject to the constraints, every effort was made to sample as diverse a group of exporters as possible. Even so, pribumi firms probably are oversampled, in part because we made a special effort to seek out pribumi exporters, and in part because suspicion as to the purposes of the interview appeared especially marked among some non-pribumi firms. The sample is also probably biased away from firms experiencing difficulties in their export efforts or in their overall performance.

4. SUBSECTOR AND SAMPLE CHARACTERISTICS

This subsection reviews in turn for each of the three subsectors the characteristics and experiences of the surveyed firms. While there are substantial differences from case-to-case, four general features seem evident:

* First, it is not the case that successful SMEs are to be found only among non-pribumi entrepreneurs. While the garment industry indeed appears to be dominated by non-pribumi firms (although our sample includes a smattering of pribumis), the field survey uncovered a substantial minority of pribumis among rattan exporters, and revealed that carved furniture exports from Jepara are dominated by pribumi firms.

* Second, in both the garment and rattan cases, SME entrepreneurs tended to be highly educated, with more than 70% having had at least some university education. Correspondingly, there were virtually no instances in either sector of firms that had begun as microentrepreneurs or small subcontractors graduating to become fully fledged direct exporters. For reasons outlined further below, the Jepara case provides a partial exception to these patterns.

* Third (again with the partial exception of Jepara), the surveys uncovered a sharp bifurcation between firms that produced for the domestic market, and those that focused on exports. Most of the firms surveyed exported virtually all of their output, and very few of them cut their teeth in the domestic market before moving on to exports.

* Fourth, in all three subsectors, growth among the firms surveyed was rapid. While to some degree the uniformly strong performance may be an artifact of sample bias, the results demonstrate clearly that the benefits of outward-orientation are not monopolized by the largest firms. On the contrary, all three sectors showed evidence of a nascent and dynamic class of new SME entrepreneurs.

Indonesia's SME Exporters of Rattan Furniture

Indonesia has long produced a wide range of rattan products for domestic use. However, these have been goods of low quality, used by low income consumers, and supplied by small-scale enterprises, using quite simple tools and lower quality raw materials. Rattan furniture was not widely used in the

country (the climate is not kind to it), and was not purchased by middle and upper income families.

Despite these limitations, several Jakarta-based firms pioneered exports of rattan products in the 1970s; most were led by pribumi entrepreneurs. These pioneers were not, however, the prime movers behind the "take-off" of Indonesian exports of rattan furniture which occured in the second half of the 1980s. In part, this take-off was a response to the broad policy reforms described earlier. But at least as crucial were bans on exports of rattan material.

Indonesia has long been a major supplier of raw rattan to the major rattan furniture exporting countries of Taiwan and the Philippines. In an effort to 'jump-start' the rattan products industry, the Indonesian government imposed bans on the export of unprocessed and semi-processed rattan, in 1986 and 1988-9 respectively. While from a public policy perspective its costs may well have exceeded its social benefits, the evidence seems unequivocal that the ban led to a major expansion in rattan furniture exports. The growth and changing size structure of the industry in the 1980s is revealed in Table 1 (although many smaller firms are probably missed). Output of rattan furniture and related rattan products has grown very fast over the period since about 1983 (accelerating in anticipation of the bans), though the absolute level of output was not very large until the late 1980s and exports exceeded U.S. 100 million only in 1989.[2] While in 1981, there were no establishments with more

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[2] We have not been able to obtain official export statistics for rattan furniture alone. total furniture exports, of which the bulk are of rattan, give a good idea of the trends. World Bank data (World Bank, Report No. 9498-IND, Indonesia: Developing Private Enterprise, May, 1991, p.138) are as follows (in U.S. millions):

1985	7.1
1986	9.2

than 500 workers, by 1987 there were 15, which together accounted for 31% of output.

The export explosion in the late 1980s brought a new set of participants into the industry. Some former traders in raw rattan switched to the production of the semi-processed item, and subsequently of final goods; most of these were Chinese. Some pribumi rattan collectors also went into production. Immediately following the export bans, a leading business group set up a number of large rattan furniture export factories. As the industry expanded Surabaya, a port from which raw and semi-processed rattan had formerly been exported, began to rival Jakarta as a major center of production. And export producers also began to penetrate Ciribon, which had long been a traditional center of rattan handicraft.

A total of 33 rattan product exporters were interviewed, 22 in the Jakarta area and 11 in Surabaya. All but one of the firms sampled exported 90% or more of their output. Indeed, 26 of 33 firms began exporting the same year they entered into production.[3]

Nearly half of the 33 firms interviewed started in 1988 or 1989, reflecting the great burst of activity as the bans were imposed on exports of raw and semi-processed rattan. Seven of the sample firms entered in the 1970s. Only 1 entered after 1989 -- perhaps a consequence of the placing of the rattan furniture industry on the negative list of industries in that year,

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1987	27.2
1988	69.7
1989	153.3
1990	241.0 (estimate)

[3] Earlier entrants were more likely to sell for some years in the domestic market before exporting. Four of the 10 firms surveyed that entered prior to 1982 produced for at least 4 years before venturing into exports.

closing it to further domestic and foreign investment. Twenty-five of the 33 firms sampled were independent, while 8 were part of business groups; 6 of these 8 entered between 1987 and 1991.

14 of the firms had pribumi entrepreneurs, 16 non-pribumi, with 3 unspecified. Five of the pribumi entrepreneurs started up their businesses in the 1970s. Subsequently, non-pribumi entrepreneurs have played a larger role, although even in the most recent period entry by pribumis remains substantial. Most of the entrepreneurs were highly educated, with 27 of 33 having had at least some university education. The concentration of university-educated entrepreneurs was especially high among the pribumi -- with 13 of 14 having had at least some university experience. The post-1986 expansion has brought a new wave of less educated entrepreneurs (the former rattan traders) into the industry: 5 of 6 entrepreneurs in the sample that failed to complete secondary school entered during this latter period, all non-pribumi, and all in Surabaya.

As Table 2 shows, size at start-up varied widely: 7 sample firms began with 10 or fewer workers; 1 with over 500. On average, pribumi firms were less than one-third the size of their non-pribumi counterparts at start-up. Growth since start-up has generally been rapid: 24 firms have more than doubled in size; 10 firms now have 500 or more workers; only 11 have expanded their work force by less than 50%.

Jepara's Exporters of Carved Wooden Furniture and their Origins

Jepara is a densely populated, semi-urban county of 820,000 people in Central Java, an easy three-hour drive along good roads from the port of Semarang, Indonesia's third largest city. For hundreds of years before the 17th century Dutch conquest, it was a center of traditional woodcarving for

Javanese courts (wooden furniture was not an object in everyday household use in traditional Indonesia). These woodcarving skills have persisted to the present day, and for the past century or more have been incorporated into the production of heavily carved wooden furniture for the domestic market. Carved mahogany and teak furniture from Jepara began to find its way onto world markets in 1986. As of mid-1992 exports were estimated[4] to amount to 10-15% of total sales.

Jepara's furniture industry is organized into three tiers -- workers, production groups cum subcontractors, and primary contractors. Estimates of the number of workers with carpentry and carving skills range from 22,000 to 80,000. As of 1989, there were 1,900 registered furniture companies, of which 100 reportedly were primary contractors.[5] While no data were available on the total value of domestic or export sales, extrapolating from the firm surveys conducted for this study, $25-$40 million appears to be a reasonable range for Jepara's 1991-2 furniture exports.

Field interviews were conducted in mid-1992 with 24 of the 40 or so enterprises that had participated at least to some extent in export markets. All but 5 of the 24 firms reported that exports accounted for 50% or more of their sales (Table 3). Export level was bimodally distributed: estimated[6] exports per firm were less than $250,000 annually for 14 interviewees, and for

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[4] By the local chairman of the furniture producers association.

[5] The estimate of 1,900 formal firms is from the Ministry of Industry. The figure of 100 primary contractors was provided by the local chairman of the furniture industry association.

[6] In general, firms were unwilling to provide explicit estimates of sales or export values. However, they were willing to provide quantitative estimates (number of 20 foot or 40 foot containers exported per month), and some of the more co-operative participants confirmed that the average value of furniture in a 40 foot container was $20-25,000.

the remaining 10 in excess of $600,000. As of 1992, the total annual value of exports for the surveyed firms was $24 million, with the 7 largest accounting for $21 million of that total.

The survey revealed that Jepara's furniture export entrepreneurs are overwhelmingly local and pribumi: all but one (an Australian expatriate) of the 24 entrepreneurs surveyed were Jepara born; of these, only two were of Chinese origin. Yet within this broad homogeneity, there was a sharp disparity in their social background: one-third had some university education, but had not been employed in a furniture craft position prior to starting their business; 54% had prior craft experience, but no university education. The preponderance of craft-based entrepreneurs highlights how important are Jepara's traditional woodcarving skills to its emerging competitive advantage. University education is correlated with export performance, but is not determinate: 50% of university-educated -- but only 15% of craft -- entrepreneurs exported at least $1 million of furniture. Conversely, exports were less than $100,000 for only 25% of entrepreneurs with university education, and for 54% of craft entrepreneurs. As one astute participant in the industry put it, it is not education per se, but "courage and openness" -- which he distinguished from the "passivity" that he claimed characterized traditional Javanese society -- that separated the successful Jeparan exporters from the rest of the pack.

Six of the sample firms were "pioneers", initiating exports in 1986 or 1987, and 17 were "followers", with 10 of these commencing exports in 1991 or later. The pioneers were a very different breed of entrepreneur than the followers: 5 of the 6 pioneers -- but only 2 of 17 followers -- had university education; and all 6 pioneers -- but only 4 of 17 followers -- were no more

than 35 years old when they commenced exports, and built their export efforts on the foundation of either start-up or relatively new firms. But as these data imply, once the pioneer entrepreneurs had paved the way, some ambitious traditional participants followed in their path.

Indonesia's SME Exporters of Garments

Garments are the leading manufactured export from Indonesia, with export value expected to reach about U.S. 5 billion in 1992. The industry is highly concentrated regionally and ethnically. Ethnically, it is heavily dominated by non-pribumi firms, which are estimated to have over 90% of garment export quotas. Regionally, production is concentrated in Jakarta or Bandung and surrounding West Javan districts. Of the total employment of 126,000, over 102,000 was in the two leading regions. According to an informal estimate, 35% of garment exports are from Bandung, typically from smaller-medium firms.

According to an informant, as of 1992 there were 20-30 big exporters with levels above U.S.10 million. Most are self-made non-pribumi businessmen, and few have university training. The smaller exporters are also mostly ethnic Chinese. A high share of all garment exports appear to come from these small and medium-sized firms.

Growth has been rapid in the garment industry since the mid-1970s -- between 1975 and 1988 value added grew at an average annual rate of 39% and employment at 27%. Exports generated about 90% of output growth during the 1980s. They expanded dramatically from less than $100 million in 1979, to surpass U.S.1 billion in 1989, 2 billion in 1991 and about double that a year later.

The growth of Indonesia's garment industry was fuelled by very rapid entry of new firms, some fairly large but most small and medium in size. As Table 4 shows, between 1981 and 1988 the number of establishments registered with the Bureau of Statistics rose from 157 to 798, with the size composition changing somewhat in favour of the largest categories. In this relatively labour intensive industry, however, the output share of firms of 100-999 workers was still 65.4% in 1988, down from 73.5% in 1981.

Field interviews were conducted in 1992 with 35 garment exporters, 27 in the Jakarta area and 8 in Bandung. Of the 33 firms reporting year of founding, 6 date from 1968-77, 10 from the short interval 1979-82, 3 from 1983-86 and the other 14 from 1987-91. Nearly half of all the firms began with 50 workers or less; at the other extreme three began with more than 500, one of them back in 1971, the other two in 1985 and 1987; median size at start-up was 112 workers and the mean was 218 (Table 5). Median current size is 475 workers and the mean is 1109 so the typical firm has grown 4-5 fold over a period of about 9 years. Average annual growth has been fastest for the set of firms created since the mid-1980s (about 25% per year). The reported level of sales ranges from under $100,000 to $57 million, with many firms falling in the $1-5 million range.

Over three quarters of the surveyed firms export all of their output directly or indirectly (26 of 33), with only 1 below 70%. A little under half of the sampled firms began exporting in their first year of existence; this share was much lower among the producers who had their start before the recent export boom. Of the 8 firms founded in the 1970s, two began to export immediately; for the others the minimum wait was 4 years and the median about 8.

Despite some effort to seek them out, the sample includes only 6 pribumi firms. Five of the six had started by 1982 (as compared with 10 non-pribumi); since that date just one pribumi -- versus 14 non-pribumi -- was added. Pribumi entrepreneurs have tended to start considerably smaller than others, with five of the six starting with 20 workers or less, and only one with over 100 (125). Consequently, although their growth has been at least average in percentage terms, their average size remains small.

Most entrepreneurs were highly educated, with 21 of 31 reporting at least some university. The share with university was about the same for pribumi and non-pribumi. Average level was less for those starting their firms prior to 1987: of these 17 just 8 had university, while among the 14 most recent founders only 2 had less than university.

5. EXPORT MARKETING AND ITS SUPPORT SYSTEMS

Analysis of relative prices and comparative advantage are the standard economic tools used to account for export performance. Yet even with favorable market conditions, exports do not proceed spontaneously, but through the medium of institutions, and via exchanges which involve transactions costs. Success in new export markets thus requires the emergence of transactionally efficient export institutions. This subsection examines how the process has taken place in each of the three subsectors surveyed. It concludes with some observations on public policy to strengthen export marketing

The main findings are as follows:

* private channels -- especially initiatives by foreign buyers -- play a dominant role overall in establishing and sustaining linkages by SMEs with export markets; however, this role is more important for larger and non-pribumi firms and for firms that have already proven themselves in export markets, than for their smaller, pribumi counterparts and for new entrants;

* linkages among an extended Chinese community that transcends national boundaries reduce the transactions costs of penetrating export markets for Indonesia's entrepreneurs of Chinese origin vis a vis their pribumi counterparts;

* collective marketing services supplied by public agencies and industry associations play a useful role in helping smaller and pribumi firms to build channels for export marketing; these services are valued by firms despite the fact that there are significant limitations in the quality of the export marketing services provided by Indonesia's collective institutions.

Export Marketing in the Rattan Furniture Industry

Tables 6-7 summarize information on patterns of export marketing by the surveyed firms in the rattan products industry, disaggregating by stage in the life cycle of individual firms, by size of firm, and by ethnic background of the entrepreneur.

Overall patterns and life-cycle variations. Private channels in general, and foreign buyers in particular, have played a dominant role in facilitating exports of rattan products. Table 6 details the channels via which firms made their initial export contacts: 22 of 32 contacts were via private channels, with the remaining 10 collective. Table 7 summarizes average scores (on a 1-5 scale) given by firms as to the relative importance of different factors in facilitating initial access into export markets; an average score of 1 implies that all firms ranked a given factor as entirely unimportant, an average of 5 implies that all firms ranked it as most important. Identification by foreign buyers scores highest, with an average score of 3.6; more than half the firms gave scores of 4 or 5. Direct efforts by firms to contact foreign buyers receive an average score of 3.5 -- almost as high as do buyer-initiated contacts, suggesting that a substantial fraction of orders from foreign buyers were actually the culmination of supplier initiatives. The importance of direct initiatives appears to decline somewhat

(the average score drops to 3.3) as firms mature. Correspondingly, the score for identification by buyers rises to 4.5 for the current period, suggesting that the relative importance of foreign buyers actually grows as firms mature, and presumably build a reputation in the eyes of buyers.

Variations by size. As Table 6 shows, the dominance of foreign buyers and other private channels in facilitating exports is especially true for larger firms: private channels accounted for 90% of initial export contacts for firms that started with more than 100 workers, but only 50% of contacts for smaller firms. This pattern is confirmed in Table 7, where the largest firms rate identification by foreign buyers as much more important for penetrating export markets than is support from collective agencies. By contrast, support from collective marketing agencies is virtually as important as buyer identification for the smallest firms, with its average score falling monotonically from 3.8 for firms with fewer than 10 workers at start up, to 2.5 for firms with over 250 workers. Direct efforts by firms to contact foreign buyers also scores highest (3.9) for smaller firms (those with 11-50 employees), declining somewhat as firm size increases. In sum, contact with foreigners is not automatic, but requires effort: foreign buyers tend to seek out larger firms, or firms that otherwise have managed to signal their reputation and availability, while collective support in establishing that contact is especially important for the smallest firms.

Variations by ethnic background of entrepreneur. Variations in export marketing channels between pribumi and non-pribumi rattan exporters go beyond differences in firm size. Many among Indonesia's Chinese population are embedded in an extended Chinese community that transcends national boundaries. The data in Tables 6 and 7 reveal that these connections reduce the

transactions costs of linking into export markets for Chinese vis a vis pribumi entrepreneurs, independent of firm size.

Among the firms with 250 or fewer workers, private channels accounted for 73% (8 of 11) of initial contacts for non-pribumi firms, but only 46% (6 of 13) for their pribumi counterparts; the disparity is especially marked for the smallest firms (Table 6). There is also a significant difference between pribumi and non-pribumi firms in the private channels used. While 3-5 of the 6 initial private contacts by pribumis were made from inside Indonesia (with buyers or expatriates based inside the country, or by correspondence), 10 of 13 initial private non-pribumi contacts were made outside the country (via a business trip abroad, or a friend or agent based abroad). These disparities do not appear to diminish as firms become established in export markets. Private channels account for 88% of current contacts of non-pribumi firms with their three largest buyers, but only 42% of contacts for pribumi. Even the disparity within private channels widened. While pribumi firms made 75% of their private contacts within Indonesia, and only 25% outside, the proportions are reversed for non-pribumi firms -- 67% outside Indonesia, and only 33% inside.

Lacking spontaneous links to the international marketplace, pribumi entrepreneurs must rely on substitute mechanisms. One such mechanism is subcontracting -- which accounted for 20% of initial export sales for pribumi firms, but played no role for non-pribumi. A second is direct marketing, which accounted for 23-26% of pribumi -- but only 6% of non-pribumi -- exports, both in the initial and current periods. Table 7 confirms these differences, with pribumi firms of all size categories generally giving higher scores than non-pribumi to direct marketing efforts and subcontracting as mechanisms for penetrating export markets.

As for collective mechanisms to support participation in export markets, tables 6 and 7 show that, even controlling for size, collective mechanisms are more widely used (Table 6), and are ascribed substantially greater importance (Table 7) by pribumi firms -- both in initial export entry and subsequently. An interesting variation on this pattern is the firms which started very small (less than 10 workers); in this range non-pribumi assigned just as much importance to the collective mechanisms as did pribumi.

Assistance to participate in trade fairs abroad emerges as by far the most useful collective source of support, with an average score of 3.8 for pribumi firms, well above trade fairs at home which received the next highest score from pribumi firms of 2.9; no other source of marketing support emerged as even moderately useful (Table 8). The lead in promoting participation in trade fairs has been shared by NAFED (an arm of the Department of Trade), by ASMINDO (the wood furniture industry association), and by the semi-autonomous Export Support Board which has provided financial support.

Export Marketing for Jeparan Firms

Export channels: A firm's eye view. Survey responses plus other comments from informants revealed that much of the initial impetus in 1986 and 1987 for exports of carved wooden furniture came from private channels outside Jepara:

* from visiting Australians who stumbled onto the idea of combining Indonesia's tropical hardwoods and Jepara's carving skills to produce reproduction antique furniture for export markets;

* from Jakarta-based furniture producers who saw the benefits of incorporating hand-carved features into their furniture export efforts;

* from tourists with an interest in furniture who happened to pass through Jepara;

* and, from contacts in the extended Chinese community, both in Jakarta and beyond.

Table 9 details the channels for initial exports of the surveyed firms. Table 10 reports firms' rankings of the importance of each of the various channels in facilitating exports. Four patterns emerge.

First, as with rattan furniture, the process of linking up to foreign markets was predominantly private: initial exports flowed through private channels for 19 of 23 firms. And 15 of 22 firms scored the relative importance of support by public or non-profit agencies at 1, while only 5 offered scores of 4 or 5.

Second, among the private actors, foreign buyers and export agents appear to provide the most important export channel: this channel accounted for 14 of 23 export transactions in the initial period of entry, and also for 29 of 46 transactions in the current period. As Table 10 illustrates, identification by buyers is ranked more highly by firms than the other channels, both for the initial and the current periods. Relative to rattan, there is thus a greater preponderance of export channels where the role of the supplying firm is essentially a passive one -- perhaps in part a reflection of the relatively lower levels of education of the Jeparan exporters.

A third pattern, similar to rattan, comprises changes over the life cycle of firms in the role of the various export channels. Table 10 provides modest evidence that the roles of direct marketing efforts by firms, of subcontracting with large exporters, and of support by public or non-profit agencies (again including 'marketing through ASMINDO') are larger during a firm's initial period of entry into export markets than during the 'current' period, with a correspondingly larger role for foreign buyers in the 'current'

than the initial period.[7] These data suggest that it can be difficult for many new exporters and foreign buyers to work directly with one another. What appears to be required is an agent capable of mediating between the nascent exporter and a foreign buyer.

The role of collective support services. The fourth pattern that emerges from Tables 9 and 10 concerns the characteristics of users of collective support services. While overall use was modest, as for rattan, collective services are more highly valued by smaller firms with less educated entrepreneurs. As is evident from Table 9, 30% of firms (3 of 10) with total annual sales of less than $250,000 -- but only 7% of firms (1 of 14) with sales of more than that amount -- made their initial exports through collective channels. Correspondingly, the average score in Table 10 for support by collective agencies is highest for the smallest firms, then falls as firm size increases. Further, users of collective support (in particular of 'exports through ASMINDO', on which more momentarily) were disproportionately likely to be craft rather than university-educated entrepreneurs: 31% of craft -- but only 14% of university-educated -- entrepreneurs used this channel.

In all, 13 of the 24 firms surveyed took advantage of one or more of three kinds of collective support available to Jeparan furniture firms -- participation in trade fairs held in Indonesia, other support from collective agencies based outside Jepara, and export support from the local branch of ASMINDO. Assistance to participate in trade fairs at home was the most common source of collective support, reported by 10 firms. However, the dominant view

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[7] This pattern holds even as the industry matured: only 3 of 8 1990-2 export entrants gave a high score to "identification by buyers" as a channel of access into export markets. Indeed, a majority of 1990-92 export entrants reported that visits by foreign buyers resulted in fewer than 20% of their initial export sales.

among these firms was that the fairs did little to enhance access into export markets.

Four of the firms surveyed (only 3 provided specific information) utilized support from collective agencies outside Jepara. One firm has close ties with ASMINDO's national office, which has both sent buyers to the firm and has helped it to participate in trade fairs abroad. The remaining two firms asked Indonesia's national export support agencies -- none of which have made any explicit efforts to promote furniture exports from Jepara -- to help identify prospective foreign buyers; both firms followed up with correspondence to the buyers. For one firm, the market contacts that resulted led to the start-up (in 1990) of an export business that now exceeds $1 million annually. The other firm continues to struggle.

Six firms reported that they had exported 'through ASMINDO', the next most common source of collective support; as noted earlier, these firms overwhelmingly were small and craft-based. Prima facie, the data in Tables 9 and 10 suggest that the local branch of ASMINDO played a crucial role in facilitating export access for most of these firms. There are, however, some troubling ambiguities in ASMINDO's role.

The most benign interpretation is of ASMINDO as a provider of export management services: handling export procedures for local craftspeople who are approached by visiting foreign buyers, but lack the knowledge to deal with the procedures themselves, and combining small-lot orders into a size large enough to be shipped by container. In providing these services, it could be argued, ASMINDO extends opportunities to firms that would otherwise be unable to participate in export markets. Indeed, one interviewee commented that he would

prefer to export himself "but has not mastered the process"; a second wondered "how else she could know whether to take a buyer seriously".

A second interpretation of ASMINDO's role is as an intermediary between buyers and local craft firms, with ASMINDO's local representative serving for many buyers as the initial point of contact with the local industry, and channelling them to prospective suppliers. The difficulty here is that the local representative of ASMINDO is himself among the largest of Jepara's furniture exporters. Aside from the moral hazards posed by an association representative being in a position to keep for himself the best of the prospective buyers, like most large Jeparan exporters the ASMINDO representative makes extensive use of subcontracting. Consequently, it is unclear when 'directing orders to the firm' is a service provided by the industry association to its members, and when it is an essentially private arrangement between a contracting principal and its subcontractor.

Export Marketing by Garment Firms

Even more than the other sectors studied, private channels dominated export linkages in the garment industry, with collective channels playing an especially weak role. As noted earlier, garments is also the sector with the most limited participation by pribumi firms. The combination of non-pribumi dominance and the virtual absence of pribumi participation in the industry provides indirect support for the proposition that linkages among an extended community that transcends national boundaries provides an important way into export markets for Indonesia's entrepreneurs of Chinese origin vis a vis their pribumi counterparts.

Supra-national private linkages. As Tables 11 and 12 show, among the firms sampled, over 90% of export linkages came via private channels -- both at entry and currently, and many (perhaps most) of the contacts took place abroad. Within the general dominance of private channels, identification by foreign buyers and agents ranks somewhat higher than direct efforts by firms, both initially and subsequently. (Table 12) The score for foreign buyers and agents rises as firms mature (a pattern observed also in the other cases), further confirming the importance to firms of building a reputation in the eyes of foreign buyers. The tables also reveal a striking difference between non-pribumi firms and the (small number of) pribumi firms in the importance they ascribe to direct efforts to contact buyers -- 3.6-3.8 for non-pribumi firms as compared with 1.2-1.7 for their pribumi counterparts.[8] A plausible interpretation of these differences is that the availability of connections abroad provides non-pribumi entrepreneurs with a starting point for their direct efforts; but lacking such connections, pribumis perceive themselves as locked out of the international marketplace.

Subcontracting. The field surveys uncovered clear evidence that pribumi firms, lacking the international connections that were important for the export marketing efforts of non-pribumi firms, used subcontracting as a substitute channel of export marketing. Sale of the six pribumi in our sample got started as subcontractors, and subcontracting received the highest of all average scores (3.7) assigned by pribumi firms to the various channels for entry into export markets (Table 12). By contrast, only 2 of 28 non-pribumi firms got their export start as subcontractors, and the average score of 2.3

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[8] These differences remain when controlling for the size of firm.

ascribed to subcontracting in Table 12 by non-pribumi firms ranked well behind identification by buyers and direct efforts on the part of the firm.

Collective marketing support. Collective channels account for less than 10% of all marketing contacts of garment firms, both at entry and currently (Tables 11); correspondingly, firms' evaluation of support by public or non-profit agencies averages under 2.2 (Table 12). So it is apparent that, while still somewhat useful, collective marketing support is valued less in the garment industry than in either rattan or in the Jepara wooden furniture industry. That said, as in the other case studies the smallest firms (both pribumi and non-pribumi) tended to value collective support more highly than their larger counterparts.[9] Unlike the other sectors, neither foreign nor local fairs were of much importance -- a reflection of the reality that (unlike furniture) the organized fair is not an important element of the international garment marketplace. For the sample as a whole the provision of information on export marketing opportunities was ranked highest, with the regionally-based Bandung Garment Exporters Association the most effective provider of support.

Lessons for Policy towards Export Marketing

Reflecting a world-wide trend, pro-active interventions to facilitate linkages with export markets by firms are very much out of favor in Indonesia. In part as a consequence, the export efforts of the Ministry of Trade have been in disarray for some time, and a threat of closure hangs over the head of the semi-autonomous Export Support Board. In light of this background, the

[9] Average scores for support from collective agencies were 3.0 for the initial period of export access for firms of 10 or fewer workers, and were 2.6 for the current period for firms of 50 or fewer workers.

research results on marketing support systems (especially those for rattan furniture) are surprising.

To be sure, the results from all three subsectors reveal that private mechanisms are dominant in enabling SMEs to forge linkages to the international marketplace, and consequently that liberal policies alone can be sufficient for SME participation in export markets to take place. At the same time, the surveys yielded a surprisingly positive evaluation of the value of some export marketing services provided by NAFED, by the RSB, by the furniture industry association ASMINDO, and (to a lesser extent) by the Bandung regional garments association -- especially by new entrant smaller and pribumi firms which lack pre-existing international networks into which they can tap.

Which services are most useful? Within the range of collective marketing services available, the survey results suggest that aggressive efforts to seek out buyers and match them with suppliers do not pay off. There was virtually no evidence that SMEs reaped any benefit from the Ministry of Trade's International Trade Promotion Center -- an international network of offices whose stated goal is to provide international market information and market contacts to private Indonesian firms. Instead, firms valued services with a 'lighter' touch, services where only a modicum of support was required to facilitate private to-private transactions -- notably (in rattan furniture) support for participation in trade fairs abroad, and (in Jepara) quasi-export-agent functions to facilitate communications and to navigate an unfamiliar bureaucratic process.

6. THE ACQUISITION OF TECHNOLOGICAL CAPABILITY AND ITS SUPPORT SYSTEMS

Acquiring new capabilities, and improving upon those capabilities that a firm already has at its disposal, are crucial to success in export markets. Yet technology acquisition poses substantial difficulties. First, for information to be useful it must be tailored to the specific needs of an individual industry, if not an individual firm. Second, uncovering useful knowledge may require a costly process of search, often outside national boundaries. Third, inter-firm spillovers of knowledge are pervasive. While these spillovers are important channels of learning, they also create a problem of collective action, in that a firm does not capture for itself all of the benefits of its investment in knowledge, and hence may rationally underinvest.

The purpose of this section is to examine how technology acquisition proceeded in each of the three subsectors, what were the support systems that facilitated the process, and what has been -- and might be -- the role of government in relation to these technology support systems. The main findings are as follows:

* Private channels have been the dominant mechanism for acquiring technological capability in all three subsectors.

* Subcontracting as a means of organizing production is pervasive in all subsectors, and has been crucial to harnessing traditional skills for export production in Jepara in particular. While very few firms have graduated from subcontracting into direct exports, most of those that have rate their prior subcontracting experience as an important mechanism of learning.

* Employment of expatriates emerged as an especially powerful mechanism for acquiring technological capability in both the rattan and garment sectors. However, consistent with the transactional advantages of being embedded in an extended community that transcends national boundaries, use of expatriates is concentrated disproportionately among non-pribumi entrepreneurs.

* Collective support mechanisms have played only a limited role in facilitating technological upgrading. As with marketing support

mechanisms, they are utilized especially by smaller pribumi firms, but even for this group their role has been modest.

* While the benefits of strengthening collective mechanisms for technological upgrading would be substantial, pervasive institutional weaknesses among potential providers make the task a difficult one.

Technological Capability and Support Systems in Rattan Furniture

When the rattan furniture export boom commenced in the late 1980s, Indonesia's industry lacked both an accumulated stock of experienced entrepreneurs and a workforce with skills comparable to those of its main international competitors. Nonetheless, considerable improvement has occurred in the quality of the Indonesian output over the last 5 years or so.

This progress was confirmed by the field surveys. Firms were asked to rank improvements on an increasing scale of "some", "significant" and "major". Virtually all of the 33 firms surveyed had made at least some improvements in both design and in finishing, and about two thirds of the firms reported some improvement in workplace organization and equipment sophistication. In all four categories, at least 8 firms reported significant or major improvements.

While the primary focus of this study is on sources of technological capability that are external to firms, external providers are not the only important source of capability. Indeed, as Table 13 shows, the surveyed firms rated on the job learning as the most important source of capability over the lifetime of the firm. Support from external providers does emerge as the most important source of capability for the initial period of direct entry into foreign markets, although (for reasons examined in more detail below) this is true more for non-pribumi than pribumi firms.

Table 14 reports on the usefulness to firms of 11 external sources of technological capability. Seven of the 11 are private.

Buyers and suppliers. Overall, foreign buyers emerged in the survey as the most useful source of technological capability for both pribumi and non-pribumi entrepreneurs, with an average score of 3.7. Buyers share a strong mutual interest with the producers in the quality of the product, often supplying designs, and assisting the firms in finding the best way to produce their items.

By contrast to foreign buyers, equipment suppliers are not an important source of capability (average score = 1.6), partly due to the simplicity of much of the machinery but also, according to one informant, due to the inappropriateness of some of it to the situation of the small-medium producer.

Expatriate employees. The average score for expatriate employees in Table 14 is a modest 2.6. But this average is misleading. Only 14 of the 33 firms sampled used expatriates, but these 14 valued them greatly, with 11 providing the maximum possible score of 5, and the remainder a score of 4. Most expatriates came from the Philippines and Taiwan (both major rattan furniture exporters); Japan, the USA, Korea and Thailand also were suppliers.

Expat use is more prevalent for larger firms and for those run by non-pribumi. Thus, as Table 15 shows, firms with over 250 workers are substantially more likely to have at least one expat than their smaller counterparts -- 63% (10 of 16) as compared with 35% (6 of 17). Even controlling for firm size. Expat use is concentrated disproportionately among non-pribumi entrepreneurs -- 63% (10 of 16) use them, as compared with only 36% of pribumi, with the intensity of use three-times higher among the non-pribumi firms. Half the non-pribumi users of expats recruited them from Taiwan

and Hong Kong, but none of the pribumi users drew expats from these sources -- another pattern that points to the transactions cost advantages to non-pribumi firms of being embedded in an extended community that transcends national boundaries.

Subcontracting. Subcontracting out is the norm among rattan products exporters, with 25 of the 33 firms surveyed principals in subcontracting relations. Thirteen firms subcontract out complete orders, and 4 of these generate 40% or more of their product for sale in this way. Twenty firms subcontract out specific tasks. Subcontracting out is more prevalent among pribumi firms, 86% of whom (12 of 14) engage in the practice, as compared with 63% of the non-pribumi (10 of 16). Further, pribumi are more likely to subcontract out complete orders -- 7 do so (for an average of 29% of sales, as compared with only 4 non-pribumi.

As part of their efforts to control product quality, the subcontracting principals that we surveyed help their subcontractors build technological capability. In virtually all cases the contractor inspects the quality of goods provided by the subcontractor and visits the plants to provide advice. In half of the cases the firm also helps to train the workforce, this latter being a little less frequent among non-pribumi. The median rejection ratio for the product of subcontractors was 5%.

In spite of its apparent importance in the industry, subcontracting does not provide a major stepping stone into exports. Only 4 of the firms surveyed (all pribumi) used a relationship as a subcontracting agent as the channel for 30% or more of their initial exports; three of these rated the relationship as important or very important (score 3-5) in breaking into export markets. None,

however, rated this experience as useful as a source of acquiring technological capability. In sum, the results point to a dualistic pattern of organization of the rattan products export industry, with infrequent graduation from status of subcontractor to that of principal.

Inter-firm linkages. Information from firms in the same industry does not rank high as a source of technological improvement, with a modest average score of 1.9 (Table 14). However, indirect transfers as a result of movements of employees between firms also appear quite important: one-third of all firms sampled gave scores of 4 or 5 to prior skills of domestic employees as an important source of technological capability for entry into export markets (Table 13), and reference by firms to "hi-jacking" of experienced workers confirms that a transfer is indeed occurring.

Literature. The average score for technological literature also was modest (2.1), but pribumi firms gave it strikingly more weight than their non-pribumi counterparts (2.6 versus 1.6 on average, with only 6 of 14 giving it a low score of 1 or 2, versus 13 of 16 non-pribumi). This disparity again is suggestive of weaker linkages among pribumi firms to the global rattan industry, and hence of the importance for them of substitute sources of expertise.

Collective mechanisms. Table 14 includes four collective mechanisms for the acquisition of technological capability: support from the industry association or NGOs; the foster father program; support from public technology agencies; and (given that their use has been subsidized by government or the industry association for 7 of 9 interviewees) support for private consultants. As the table shows, the role of these collective mechanisms in upgrading has been modest overall, and virtually irrelevant for non-pribumis. The industry

association or NGOs were of some significance for pribumi, with an average score of 2.1 and a rating of 4 or 5 from three firms. Public support agencies were cited positively by just three pribumi firms, in two cases with a rating of 4. Private consultants are used by just 9 firms, being given a 4-5 rating by 4; 24 did not use them at all. The foster father plan was relevant to only one pribumi firm, but was viewed as important by that firm. A fifth mechanism of collective support (not included explicitly in Table 14) comprises courses to improve the skills of both workers and managers. Fifteen firms reported that personnel had participated in such courses; 8 mentions were of furniture making, 3 of management and the rest a small miscellany of others. 10 of 13 (which provided this datum) were sponsored by a public organization.

Table 16 details the use of all forms of collective support (including courses and financial support to hire private consultants), disaggregated by start-up size of firm and ethnic background of the entrepreneur. Over two-thirds of all firms (and nearly all of the pribumi -- 12 of 14) had utilized some form of support and nearly half had assigned a score of 3 or more to at least one of four sources. Only small non-pribumi firms failed to utilize and value at least some source of support. Thus, viewed together, the set of collective support mechanisms are not insignificant. But they are much less important than the private channels.

Technological Capability and Support Systems in Jepara

Jepara's move into export markets has been built upon the sturdy foundation of a long tradition of high quality carving and woodworking craftsmanship. Over generations, these skills have been refined and transmitted among families, neighbors, teams of co-workers. Detailed analysis

of the workings of this rich system of informal apprenticeship -- is beyond the scope of the present study. Rather, the focus here is on the ways in which Jepara's furniture firms have adapted to the needs of export markets.

Production of wood furniture for export is far more demanding than production for the domestic market. Not only is export demand very different in both design and finish than domestic demand, foreign buyers also typically require higher quality furniture construction, pre-treatment via kiln drying of wood to ensure that furniture does not warp or crack in countries that are less humid than Indonesia, and reliable delivery according to pre-specified schedules.

Subcontracting. Factory production is one way of organizing to maintain control over production and scheduling. However, Jepara's furniture industry has long been organized via a series of loose contracting arrangements between individual craftspeople and the co-ordinators of subcontracting teams; and between contractors and groups of subcontractors. The challenge for new exporters was to reshape these traditional contracting arrangements in a way that was acceptable to craft workers, yet also was able to secure the requisite quality and reliability.

Table 17 reveals how the successful exporters (with one exception, the largest firms in the sample) responded to this challenge: retain subcontracting, but move from loose to exclusive arrangements, with subcontracting agents agreeing to work for one principal only in return for an ongoing flow of orders; and -- for some firms -- maintain substantial in-house production capability both as a means of demonstrating and maintaining quality control, and as a seed-bed for spinning-off new subcontractors.

The 9 larger exporters that provided information use a variety of mechanisms to ensure that subcontractors provide the requisite quality and reliability: All maintain staff in-house to monitor the quality of goods delivered, and all reported rejecting and requiring repairs on some fraction (ranging from 2% to 10%) of deliveries. Some work only with subcontractors who are close associates or former employees. And some reported visiting each subcontractor on at least a weekly basis to provide advice; and some reported that they helped to train the workforce of their subcontractors.[10]

Private mechanisms for acquiring technological capability. Foreign buyers have been the most common source of support for upgrading technology to meet export standards with 78% of firms (18 of 23 in Table 18) reporting that they received such support, and a majority of these indicating that they valued this support highly: 9 firms assigned the maximum possible score of 5. Buyers were especially important in transmitting information relevant to design and finishing (see Table 19).

Foreign buyers aside, eight other non-collective mechanisms for acquisition of technological capability are included in Table 18. Information from technical literature and support from materials suppliers were both quite widely cited -- by 50% and 48% of respondents respectively -- with the former most important in learning about design, and the latter (notably courses offered by paint and varnish suppliers) especially important in efforts to upgrade finishing. However neither scored especially high as an important

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[10] 10 firms that export less than $250,000 also provided information on their relations with their subcontractors. 2 reported that they both visit their subcontractors at least weekly and provide some training to the workforce; 4 that they visit with some regularity (ranging from 3-times per week to 'when needed') but do not provide training; 2 that they help train but rarely visit; and 2 that they neither train nor visit.

source of capability. Although two local inter-firm mechanisms of learning proved useful, forty five percent of respondents reported learning from similar firms within Jepara, with modest gains;[11] and support from subcontracting principals was cited by 6 firms, and ranked high by the 5 firms that provided scores. Four final private mechanisms of learning -- from joint venture partners, from private consultants, from local buyers and from expatriate employees -- were not identified as useful.

Collective mechanisms. The aggregate data in Table 18 suggest that collective mechanisms have played only a modest role in the acquisition of technological capability: 43% of respondents acknowledged support from ASMINDO or other non-governmental organizations, and 26% from government agencies; however, their usefulness scores were modest. Yet for all that its role is limited in aggregate, the field evidence provides some support for the hypothesis that collective technology support fills gaps that would otherwise be left uncovered by private actors.

The field survey uncovered evidence that collective efforts to support technology acquisition reach firms that would not otherwise be able to participate effectively in export markets. 69% (9 of 13) of craft -- but only 36% (4 of 11) of university-educated -- entrepreneurs reported that they had indeed availed themselves of collective technological support. A similar pattern is evident among the three[12] firms that gave scores of 4 or 5 in Table

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[11] These moderate scores appear suspiciously low, and may reflect an unwillingness on the part of interviewees to acknowledge ubiquitous imitation. Alternatively, they may signal that the export market is still at an early stage of development, and has not yet sunk deep roots in Jepara.

[12] One firm scored 4 for one category and 5 for the other. One of the 2 entrepreneurs that scored 3 for the NGO/industry association category was university educated, but the other had only primary education.

28 to collective support mechanisms: none were university educated (though two had completed secondary school); all 3 were craft-entrepreneurs; none were industry pioneers.

A second gap-filling role is related to function. While some areas appear well covered by private mechanisms, collective agencies, (e.g. NGOs, a local woodworking school, and the industry association ASMINDO) were important channels of information on how to dry wood to prevent warping or cracking, and on how to finish furniture to secure the 'look' preferred on export markets (Table 19).

Acquisition of Technological Capability and Support Systems for Garment Exporters

While Indonesia's garment industry presently competes on the lower end of the quality spectrum, it is frequently argued that it needs to begin to move upmarket into garments with greater fashion content and more sophisticated design, and with the associated shorter turnaround time. The field survey confirmed that considerable technological improvement has indeed been occurring. Fourteen of 31 firms indicated that they have made significant or major design improvements, with pribumi and non-pribumi not differing much in this regard. Seventeen of 31 claimed significant or major improvements in workplace organization. Nine firms cited significant or major improvements in equipment sophistication.

As with rattan, on the job learning emerges as the most important source of capability over the lifetime of garment firms (Table 20). One striking feature of the garment case is the negligible role of collective support provision. Whereas in rattan collective support played some, albeit modest

role in upgrading capabilities, in garments it played virtually none (Table 21). Note, though, that the absence of useful collective support may not be for want of trying. Indonesia's garment and textile industries have a long history of public interventions to build technological capability. Bandung's Institute of Textile Technology is 60 years old.

Turning to private channels, Table 21 details firm rankings of various sources of support. Some striking parallels with rattan and wood furniture emerge, but also some intriguing differences.

Expatriate employees. As with rattan, about half of the firms sampled used expatriates, and virtually all that did rated their value exceedingly highly. Expatriates were viewed as especially useful with respect to efforts to improve organization of the workplace.

Use of expats was again concentrated among the larger (and hence non-pribumi firms); none of the firms with 100 or fewer -- but all of those with more than 1000 -- workers used expats (Table 22). Only 1 pribumi firm used expats (from Korea), and the intensity of its expat use was lower than for non-pribumi firms in the same size category. Twenty of 26 non-pribumi used expats, with the dominant countries of origin being Korea and Hong Kong. Again, it is evident that the non-pribumi are well placed to draw effectively on the technological expertise of the regional Chinese community.

Age of the firm is another determinant of the use of expats. Among those size categories where use is prevalent, firms founded before 1987 tend to use less than half as many expats per worker as the more recently established ones. Very possibly, this pattern reflects a learning process whereby the expats are replaced as a firm's workers develop the necessary skills.

Buyers and suppliers. Foreign buyers again emerged as an important source of technological capability, although not to the same extent observed in the other sectors (average score = 3.0).

Equipment suppliers scored somewhat higher for garments (average = 2.1) than they did for rattan, with firms that reported significant or major improvements in equipment sophistication making particular mention of the information provided by suppliers. Their average score was a full point higher for pribumi than non-pribumi firms (3.0 versus 1.9), perhaps yet another signal of the importance pribumis ascribe to sources of expertise that can substitute for their weaker international connections.

Subcontracting. As in both rattan and wooden furniture, the survey uncovered a substantial amount of subcontracting among garment firms. Twenty of 33 firms reported subcontracting out some share of their orders, with the median share produced in this way being 20%. While whole-order subcontracting is widely prevalent, subcontracting is used only to a moderate degree to achieve specialization and a greater division of labor.[13] The most common ways of finding subcontractors (26 firms reported on this) was through business word of mouth (9) active search (6), their coming to the firm (5) and the firm training individuals to take on the role (4); two firms reported that their subcontractors had previously been employees. In virtually all cases the contractor inspected the quality of goods provided by the subcontractor and visited the plants to provide advice; in half of the cases the firm also helped to train the workforce.

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[13] Countries differ in the extent of division of labor. The pattern of producing a whole garment within a factory has long been the norm in Korea. But much more specialization is evident among Taiwanese and Hong Kong firms.

There is somewhat more evidence for the garment industry than for rattan that subcontracting has served as a stepping stone into direct exports, especially for pribumi firms: five of the 6 pribumi informants gave a score of 3 or higher to their subcontractor principals as a useful source of technical support (see Table 21). The divergent patterns for garments and rattan suggest that the possibility of graduating from subcontractor to direct exporter may rise somewhat as an industry matures.

Other inter-firm linkages. An especially striking difference between the garment and rattan case studies is in the greater importance to the garment industry of inter-firm spillovers (other than subcontracting). A comparison of Tables 13 and 20 provides one piece of evidence: the average score given to prior skills of domestic employees as source of technological capability in the initial period of entry into foreign markets is 3.5 for the garment industry (with over 50% of firms volunteering a score of 4 or 5), as compared with 2.7 for rattan (where one-third of firms scored 4 or 5). A second piece of evidence lies in the substantial difference in the importance accorded to learning from other firms in similar activities, a source given an average score of 3.8 by the garment firms, but only 1.7 by those in the rattan industry (compare Tables 14 and 21). Again, a plausible interpretation of these differences is that the magnitude of intra-industry, inter-firm spillovers rises as an industry matures.

The Delivery of Collective Technical Support in Indonesia

The case studies of rattan furniture, carved wooden furniture from Jepara, and garments suggest that there may indeed be gaps in technological support systems which could in principle be filled by collective institutions,

but that Indonesia's collective institutions largely lack the capability to fill these gaps and that remedying these weaknesses is likely to be difficult.

The survey results suggest that neither of the two major technology-related initiatives under the umbrella of the Ministry of Industry -- the Ministry's extensive network of technology extension services, and its foster father program -- have been of significant benefit to SME exporters. It is possible that this negative result is an artifact of the survey's exclusive focus on exporters, and that more substantial benefits might be evident among firms that serve only the domestic market. However, there are reasons for suspecting that the failures may be more fundamental. As is evident from the case studies, a firm's technological needs are highly specific to its individual circumstances -- and specific needs of this kind simply cannot be met by a centrally-controlled, supply-driven network of technology extension services staffed by personnel whose specialized technological expertise is at best modest. As for subcontracting (which the foster father program is geared to promote), the field surveys reveal that it already is pervasive, and that it has emerged spontaneously in response to its organizational and commercial advantages. There may be some room on the margin for tilting incentives in such a way as to accelerate the emergence of subcontracting. However, a program which pays no attention to the underlying economic incentives of firms to participate in subcontracting arrangements is doomed to have no independent impact.

In principle industry associations might be better placed than a centralized ministry to collectively provide industry-specific knowledge. Indeed in both rattan and garments, industry associations provided useful technical or marketing support. However, overall Indonesia's industry

associations tend to be exceedingly weak. They are not professionally staffed; they are rarely accountable to their members; they tend to be captured by powerful players/patrons in the industry, and consequently are viewed with ambivalent suspicion by smaller participants in the industry; and their umbrella organization lacks credible autonomy from government.

Overall, the message of the case studies with respect to SME technology policy is a mixed one. On the positive side, the evidence is clear that private channels alone have been adequate to permit a substantial amount of technological upgrading to occur. The implication follows that it is important for Indonesia to sustain and strengthen liberal policies towards the international flow of people and information. But on the negative side, the evidence suggests that, while there clearly are technology gaps which in principle could be filled by collective institutions, at best the development of Indonesia's collective technology support system is in its infancy. A central lesson of the experience thus far is that at this stage of Indonesia's development the government should not be in the business of direct delivery of technology services. Rather, its role should be to facilitate and support the emergence of private networks of technology provision. Some potentially successful measures to support the acquisition of technological capability include subsidization of the use of foreign private technical consultants; and some specialized training offered by non-governmental oganizations. What these initiatives have in common is the use of concessional funding channeled by agencies organized along lines similar to the export support board to support non-government service delivery.

7. CONCLUSIONS

Five general conclusions as to the appropriate balance between private and collective technical and marketing support systems for Indonesia's SME exporters emerge from the empirical research.

First, private support systems alone have been sufficient to sustain a substantial fraction of Indonesia's SME exports. Most export marketing has taken place exclusively through private channels and private channels have been the dominant source of technological capability for SME exporters. The implication follows that it is important for Indonesia to sustain and strengthen liberal policies towards the international flow of people and information.

Second, access to these low transactions cost private channels of support appears to be uneven. Private channels appear to be most readily accessible to larger firms, to educated entrepreneurs and to non-pribumi entrepreneurs who can take advantage of a network of linkages among an extended Chinese community that transcends national boundaries. While extensive subcontracting takes place between larger and smaller firms, so far there is only limited evidence of subcontractors graduating to become fully-fledged exporters. In all, an exclusive reliance on private support systems risks limiting the participation in export markets of a broad base of SME entrepreneurs.

Third, collective support can substitute for a lack of access to private channels on the part of "cutsider" private firms. Pribumi and smaller firms relied heavily on collective marketing support to gain access to export markets. And collective technology support appeared somewhat more important for smaller, pribumi firms, although even for this group its impact has been modest.

Fourth, pervasive organizational weaknesses sharply limit the potential of Indonesia's collective institutions to aid in broadening the base of private entrepreneurship. Public institutions generally lack the commitment resources and flexibility to provide high-quality support to SMEs. And industry associations generally lack the professionalism and accountability to win the confidence of putative private recipients of their services.

Fifth, at this stage in Indonesia's development, pro-active intervention to broaden private participation in export-oriented industrial development should support private-to-private transactions, and not endeavor to provide support directly. Direct efforts by the public bureaucracy to find foreign buyers for Indonesian firms and direct efforts to upgrade technological capability both appear to have been failures.

TABLE 1
THE AVERAGE DISTRIBUTION OF INDUSTRIAL EMPLOYMENT BY ESTABLISHMENT SIZE AND BY LEVEL OF PER CAPITA INCOME (% OF TOTAL)

GNP Per Capita ($)	Number of Countries	Cottage Shops (1-4)	Small (5-19)	Medium (20-99)	Large (100 +)	Total
$100-500	6	64	7	4	25	100
$500-1,000	7	41	12	10	37	100
$1,000-2000	7	11	13	14	61	100
$2,000-5,000	9	8	11	17	64	100
$5,000 +	5	4	6	20	70	100

Source: Donald E. Snodgrass, "Employment and Enterprise Policy in Structual Transformation," Harvard Institute of International Development, draft manuscript, July 1992, page 63.

Notes: Based on industrial data from 34 countries.

TABLE 2
DISTRIBUTION OF SAMPLED RATTAN FIRMS, BY START-UP AND CURRENT SIZE

Size at Start-Up	Current Size (Number of Workers)						All	Mean Initial Size (Number of Workers)	Current Size Mean (Number of Workers)
	1-50	51-100	101-250	251-500	501-999	>1000			
0-10 Workers									
All	1	1	2	3	0	0	7	5.7	270
Pribumi	1		1	2			4	5.5	295
Non-pribumi		1	1	1			3	6	237
11-50 Workers									
All		2	3	2	2	0	10	31.5	250
Pribumi	1	0	2	2	2	0	7	29	311
Non-pribumi	0	2	0	0	0	0	2	40	68
100-250 Workers									
All	2	0	3	1	4	0	9	151	376
Pribumi	1	0	2	0	0	0	3	144	130
Non-pribumi	0	0	1	1	3	0	5	145	470
251-500 Workers									
All	0	0	1	1	2	1	5	350	680
Pribumi	0	0	0	0	0	0	0		
Non-pribumi	0	0	1	1	3	0	5	145	470
>500 Workers									
All	0	0	0	0	1	0	1	600	900
Pribumi									
Non-pribumi								600	900
All									
All	3	5	9	6	9	1	32	136	377
Pribumi	3	1	5	3	2	0	14	67	234
Non-pribumi	0	4	2	3	5	1	15	191	481

TABLE 3
PARTICIPATION IN EXPORT MARKETS
BY SURVEYED JEPARA FIRMS

Annual Value of Export Sales	Export as Percentage of Firm Sales				Total Number of Firms
	<50%	50-74%	75-99%	100%	
US $1 million or more	-	2	2	3	7
US $600,000-999,999	-	-	3	-	3
US $250,000-599,999	-	-	-	-	-
US $100,000-249,999	-	-	3	1	4
US Less than $100,000	5	3	1	1	10
Total Number of Firms	5	5	9	5	24

TABLE 4
SIZE STRUCTURE OF THE GARMENT INDUSTRY, 1981-89[a]

	Size of Establishment (Number of Workers)						
	<50	51-100	101-500	501-1000	>1000	All	Total Number
Distribution of Establishments:							
1981	55.4	19.1	19.1	51.0	1.3	100.0	157[b]
1985	74.0	15.8	17.4	3.3	1.7	100.0	575[b]
1988	61.8	13.2	18.9	18.8	18.8	100.0	798[b]
Distribution of Output:							
1981	11.6	10.8	36.6	28.9	12.2	100.0	16.4[c]
1985	11.7	10.0	46.5	17.7	14.0	100.0	121.6[c]
1987	13.3	6.7	33.8	31.0	18.9	100.0	333.5[c]
1989	7.2	6.0	39.6	29.5	17.7	100.0	446.2[c]
Distribution of Employees:							
1981	11.4	10.4	41.7	26.2	10.3	100.0	20.2[d]
1985	17.4	8.9	33.7	18.9	21.2	100.0	69.7[d]
1987	13.3	6.7	33.3	22.6	24.2	100.0	107.5[d]
1988	11.0	6.4	32.6	27.0	22.9	100.0	129.5[d]

Source: Unpublished data of BPS, based on the annual manufacturing survey.

Notes:

[a] These data are highly incomplete with respect to the smallest size category. The number of establishments in large categories that may be missed is not clear, but it is probably not too many.

[b] Value-added at market prices, billion rupiah.

[c] Number of establishments.

[d] Number of employees, thousands.

TABLE 5
DISTRIBUTION OF SAMPLED GARMENT FIRMS, BY START-UP AND CURRENT SIZE

Size at Start-Up (Workers)	Current Size (Number of Workers)							Mean Start Size	Mean Current Size
	1-50	51-100	101-250	251-500	500-999	>1000	All		
0-10	2 (2P)[a]	2 (2P)[a]	2	2 (1P)[a]	0	0	8	45	167
11-50	1	0	4 (1P)[a]	1	0	1	7	36.4	431
100-250[b]	0	0	1[b]	6	0	3	10	187	1185
251-500	0	0	0	1	3	2	6	391	1217
>500	0	0	0	0	0	3	3	967	4733
All	3	2	7	10	3	8	34	218	1109

Notes:
[a] Figures in parentheses refer to pribumi firms.
[b] This category includes one firm which began with 70 workers.

TABLE 6
CHANNEL FOR FIRST DIRECT EXPORTS, BY INITIAL SIZE OF RATTAN FIRM AND ETHNIC GROUP

Channel		Initial Size (Number of Workers)				
		1-50	51-100	101-250	>250	All
Collective:						
Fair Outside Indonesia	T[a]	3				3
	P[b]	2				2
	NP[c]	1				1
Fair Inside Indonesia	T	1	1	1		3
	P		1	1		2
	NP	1				1
NAFED	T	2	2			4
	P	2	2			3
	NP		1			1
All Collective	T	6	3	1		10
	P	4	2	1		7
	NP	2	1	0		3
Private:						
Buyer of Foreign Agent in Indonesia	T	1	2	2		5
	P		1	1		2
	NP	1	1	1		3
Buyer/Business Tour/Correspon-dence Outside	T		2	2	3	7
	P		1			1
	NP			1	2	6
Family or Friends	T		1	2	3	7
	P		1			1
	NP	1		2	3	6
Business Contract/ Partner	T		3			3
	P		2			2
	NP		1			1
Unspecified	T		1			1
	P		1			1
	NP					
All Private	T	1	9	6	6	22
	P		6	1		7
	NP	2	2	4	5	13
Total	T	7	11	8	6	32
	P	4	7	3	0	14
	NP	4	3	4	5	16

[a] Total
[b] Pribumi
[c] Non-pribumi

TABLE 7
RELATIVE IMPORTANCE OF PUBLIC SUPPORT AND OTHER FACTORS IN INITIAL AND CURRENT ACCESS TO RATTAN EXPORT MARKETS, BY START-UP SIZE AND BY ETHNIC GROUP

actor Contributing to Access) Export Markets		Initial Access					Current Access
		Size at Start-Up (Number of Workers)					
		<10	11-50	100-250	>250	All	All
lentification of rm by foreign uyers or export gents	T[a]	3.8	3.2	3.7	4.0	3.6	4.3
	P[b]	3.0	2.9	3.7		3.1	4.1
	NP[c]	4.5	4.5	3.8	4.0	4.2	4.5
lirect efforts by the rm to contact foreign uyers or export gents	T	2.9	3.9	3.6	3.7	3.5	3.3
	P	3.3	4.0	3.3		3.6	3.6
	NP	2.5	3.0	3.4	3.4	3.1	2.8
upport by public or onprofit agencies	T	3.8	2.9	2.8	2.5	3.1	2.9
	P	3.8	3.3	3.0		3.6	3.3
	NP	3.8	1.5	2.4	2.8	2.8	2.9
ubcontracting elationship with irger exporters	T	1.5	1.0	1.7	1.0	1.3	1.1
	P	1.8	1.0	3.0		1.6	1.1
	NP	1.3	1.0	1.0	1.0	1.1	1.1

otal
ribumi
lon-pribumi

TABLE 8
RELATIVE USEFULNESS TO RATTAN FIRMS OF VARIOUS TYPES OF SUPPORT FROM PUBLIC AND OTHER NONPROFIT AGENCIES IN PENETRATING EXPORT MARKETS

Type of Support		Firm Size at Start-Up (Number of Workers)					
		<10	11-50	100-250	251-500	>500	All
Facilitated Participation in Trade Fairs Abroad	T[a]	4.0	3.2	2.9	1.0	3.0	3.0
	P[b]	5.0	3.1	3.7	-	-	3.8
	NP[c]	3.0	3.0	2.2	1.0	3.0	2.3
Organized a Fair at Home	T	2.8	3.4	2.7	1.8	1.0	2.7
	P	2.3	2.9	4.0	0	-	2.9
	NP	3.3	4.5	2.0	2.0	1.0	2.6
Sent Buyers to the Firm	T	2.1	2.0	2.0	1.4	1.0	1.9
	P	2.8	2.1	1.7	-	-	2.2
	NP	1.5	1.0	2.4	1.5	1.0	1.7
Supported Marketing or Exploratory Trips Abroad	T	2.0	2.3	1.8	1.0	2.0	1.9
	P	1.8	2.4	2.0	-	-	2.1
	NP	2.3	1.0	1.8	1.0	2.0	1.6
Information on Export Market Opportunities	T	2.1	2.6	1.7	1.6	2.0	1.9
	P	2.0	2.3	2.0	-	-	2.1
	NP	2.3	2.0	1.2	1.8	2.0	1.8

[a] Total
[b] Pribumi
[c] Non-pribumi

TABLE 9
CHANNEL FOR FIRST DIRECT EXPORTS OF JEPARA FIRMS, BY CURRENT SIZE OF FIRM

Channel	Size of Firms (Total Current Sales, $000's)				
	<100	100-249	251-999	>1000	All
Collective: Asmindo	1	2		1	4
Private: Buyer in Indonesia	3	4	5	2	14
Expatriate/Family Partner				2	2
Correspondence				2	2
Agent or Buyer Abroad				1	1
Total Private	3	4	5	7	19
Total	4	6	5	8	23

TABLE 10
RELATIVE IMPORTANCE OF DIFFERENT FACTORS IN THE FACILITATION OF ACCESS TO JEPARA EXPORT MARKETS, BY CURRENT SIZE[a]

Factors	Size	Initial Access: Average Importance Score	Initial Access: Percent of Firms Assigning a Score of 4	Initial Access: Percent of Firms Assigning a Score of 5	Current Access
Direct Efforts by Firm to Contact Foreign Buyers or Export Agents	T	1.8	0.0	18.2	1.3
	<100	1.0	0.0	0.0	
	100-249	1.4	0.0	0.0	
	250-1000	1.8	0.0	20.0	
	>1000	2.7	0.0	42.0	
Identification of Firm by Foreign Buyers or Export Agents	T	3.4	0.0	50.0	4.7
	<100	3.4	0.0	60.0	
	100-249	3.4	0.0	60.0	
	250-1000	3.8	0.0	60.0	
	>1000	3.1	28.6	28.6	
Support by Public or Nonprofit Agencies	T	2.0	4.5	18.2	1.7
	<100	2.6	0.0	40.0	
	100-249	2.2	0.0	20.0	
	250-1000	1.4	0.0	0.0	
	>1000	2.0	14.3	14.3	
Subcontracting Relationship with Larger Exporters	T	2.4	5.3	26.3	1.9
	<100	1.0	0.0	0.0	
	100-249	2.8	0.0	40.0	
	250-1000	2.5	0.0	25.0	
	>1000	3.0	16.7	33.3	

Notes:
[a] Size equals total sales (US $000's).

TABLE 11
CHANNEL FOR FIRST DIRECT EXPORTS BY START-UP SIZE AND ETHNIC GROUP, GARMENT FIRMS[a]

Contract	Number of Workers					
	1-10	11-50	100-250[b]	251-500	>500	All
Private: Buyer in Indonesia/Foreign Agent in Indonesia/Buyer Came	1(P)	2	2		1	6
Family/Friends			2			2
Buyer Outside Indonesia	1		2	1	1	5
Business Tour Abroad		1		1	1	3
Business Contact/ Partner/Business/Word of Mouth	0	2	1	2	0	5
Subcontract	2(P)	0	2[a]	1	0	2
Contacted Buyer/Agent	0	2(1P)	0	0	0	2
Collective: Fair Outside Indonesia	1		1			2
NAFED	1	0	0	0	0	1
Unspecified	2(1P)	0	0	1	0	3
Total	8	7	10	6	3	34

Notes:
[a]P refers to Pribumi firms.
[b]Includes one firm which started with 70 workers.

TABLE 12
RELATIVE IMPORTANCE OF DIFFERENT FACTORS IN THE FACILITATION OF INITIAL AND CURRENT ACCESS TO GARMENT EXPORT MARKETS, BY START-UP SIZE AND ETHNIC GROUP

Factor		Initial Access			Current Access		
		Average Score	Percent of Firms Assigning a Score of		Average Score	Percent of Firms Assigning a Score of	
			4	5		4	5
Identification of Firm by Foreign Buyers or Export Agents	T[a]	3.5	45.5	21.2	3.9	30.3	48.5
	P[b]	3.5	16.7	33.3	4.0	33.3	50.0
	NP[c]	3.7	58.3	20.8	4.2	33.3	54.2
Direct Efforts by Firm to Contact Foreign Buyers or Export Agents	T	3.2	9.4	40.6	3.3	15.2	36.4
	P	1.7	16.7	0.0	1.2	0.0	0.0
	NP	3.6	4.4	52.2	3.8	20.8	41.7
Support by Public or Nonprofit Agencies	T	2.1	6.1	12.1	1.7	3.1	3.1
	P	2.2	16.7	0.0	2.0	0.0	0.0
	NP	2.1	4.2	12.5	1.7	4.2	4.2
Subcontracting Relationship with Larger Exporters	T	2.4	3.0	21.2	1.8	6.4	6.4
	P	3.7	0.0	50.0	2.5	0.0	33.3
	NP	2.3	4.2	16.7	1.7	0.0	8.7

[a] Total
[b] Pribumi
[c] Non-pribumi

TABLE 13
RELATIVE IMPORTANCE OF DIFFERENT FACTORS IN TECHNOLOGICAL CAPABILITY OVER THE LIFE OF THE FIRM AND DURING INITIAL PERIOD OF DIRECT ENTRY INTO EXPORT MARKETS (RATTAN)

Factor		Lifetime of Firm			Initial Export Entry		
		Average Score	Percent of Firms Assigning a Score of		Average Score	Percent of Firms Assigning a Score of	
			4	5		4	5
On-the-Job Learning by Employees and Entrepreneur	T[a]	4.1	30.4	39.4	3.7	6.7	53.4
	P[b]	4.0	35.7	35.7	3.3	14.3	35.7
	NP[c]	4.1	0.0	66.7	4.1	0.0	71.4
Support from Other Providers External to the Firm	T	3.6	18.2	33.3	3.0	26.6	6.7
	P	3.5	14.3	35.7	2.8	28.6	7.1
	NP	3.6	18.8	31.3	3.0	28.6	0.0
Entrepreneur/Owner's Prior Skills	T	2.8	27.3	15.1	3.0	23.3	23.3
	P	2.8	35.7	7.1	3.3	28.6	28.6
	NP	3.1	12.5	25.0	2.6	14.3	14.3
Domestic Employees Prior Skills	T	2.4	9.1	3.0	2.7	26.7	6.7
	P	2.3	7.1	0.0	2.6	28.6	7.1
	NP	2.5	12.5	6.2	2.6	36.8	7.1

[a] Total
[b] Pribumi
[c] Non-pribumi

TABLE 14
USEFULNESS OF THE TECHNICAL SUPPORT OF VARIOUS PROVIDERS, BY ETHNIC GROUP, RATTAN FIRMS

Sources		1	2	3	4	5	All	Mean Score
Foreign Buyers	T[a]	3	2	9	8	11	33	3.7
	P[b]	1	2	3	4	4	14	3.6
	NP[c]	2		5	4	5	16	3.6
Expatriate Employees	T	19			3	11	33	2.6
	P	10			1	3	14	2.1
	NP	6			2	8	16	3.4
Local Buyers	T	30	1		2		33	1.2
	P	13	1					1.1
	NP	14			2			1.4
Equipment Suppliers	T	19	10	2	1	1	33	1.6
	P	7	6		1		14	1.6
	NP	10	3	2		1	16	1.7
Subcontractor Principal	T	32	1				33	1.0
	P	13	1					1.1
	NP	16						1.0
Firms in Similar Activities	T	15	9	6	2	1	33	1.9
	P	7	4	3			14	1.7
	NP	6	4	3	2	1	16	2.3
Technical Literature	T	13	7	11	1	1	33	2.1
	P	2	4	6	1	1	14	2.6
	NP	10	3	3			16	1.6
Private Consultants	T	27	1	1	1	3	33	1.6
	P	11	1		1	1	14	1.6
	NP	15				1	16	1.3
Industry Assn. or Nonprofit NGO	T	18	5	5	3	2	33	2.0
	P	6	4	1	2	1	14	2.1
	NP	9	1	4	1	1	16	1.7
Foster Father	T	31			1		32	1.1
	P	13			1		14	1.2
Public Support Technology Agency	T	30	1		2		33	1.2
	P	11	1		2		14	1.5
	NP	16						
Other	T	23	1	4	3	2	33	1.8
	P	8	1	2	2	2	14	2.1
	NP	13		1	1		16	1.5

[a] Total
[b] Pribumi
[c] Non-Pribumi

TABLE 15
EMPLOYMENT OF EXPATRIATES, BY CURRENT SIZE OF FIRM AND ETHNIC GROUP BY ENTREPRENEUR

		Current Size of Firm (Number of Workers)						
		<50	51-100	101-250	251-500	501-999	>1000	All
›ortion of ıs ıloying atriates	T[a] P[b] NP[c]	0/3 0/3 0/0	2/5 2/4 0/1	4/9 2/5 1/3	4/6 2/3 2/3	5/9 1/2 4/5	1/1 0/0 1/1	16/33 5/14 10/16
› of atriates 100 kers	T P NP	0.00 0.00 0.00	1.40 0.00 1.81	0.36 0.26 0.55	0.31 0.23 0.40	0.24 0.08 0.41	0.54 0.00 0.54	0.34 0.17 0.50

ıotal
rribumi
ıon-pribumi

TABLE 16
USE OF COLLECTIVE SUPPORT MECHANISMS BY RATTAN FIRMS, BY START-UP SIZE AND ETHNIC GROUP OR ENTREPRENEUR

Number of Firms Utilizing Support From:	Pribumi		Non-pribumi		All	
	50 or Fewer	51 or More	50 or Fewer	51 or More	50 or Fewer	51 or More
Industry Association/ NGO	6	2	1	6	7	8
Foster Father	1	0	0	0	1	0
Public Technology Support Agency	2	1	0	0	2	0
Private Consultant	3	0	1	0	5	0
Courses	6	1	0	6	7	8
At Least One of the Above/Total Number of Firms	10/11	2/3	2/6	8/10	13/18	11/15
At Least One of the Above with Score of At Least 3[a]/Total Number of Firms	4/11	2/3	1/6	5/10	7/18	7/15

Notes:
[a] Refers only to the first four categories since firms were not asked to rate the value of the courses they had participated in.

TABLE 17
TOTAL EMPLOYMENT BY SURVEYED JEPARA FIRMS[a]

Size Range of Total Employment	Number of Firms	Total Employment	Percentage Exclusive Subcontractors	Percentage Nonexclusive Subcontractors	Percentage In-House Employees
1,000 or more	4	9,336	75.1	2.7	22.2
500-999	2	1,543	53.0	8.1	38.9
200-499	4	1,348	81.6	5.2	13.2
100-199	5	701	18.6	15.8	65.6
50-99	5	125	10.8	79.4	9.8
Less than 50	4	104	0.0	28.9	71.1

Note:
[a] In full-time equivalents.

TABLE 18
USEFULNESS OF THE TECHNICAL SUPPORT OF VARIOUS PROVIDERS, BY ETHNIC GROUP, JEPARA FIRMS

	1	2	3	4	5	Mean Score	Number of Recipients Total Respondents
Foreign Buyers	7	1	4	2	9	3.2	18/23
Technical Literature	14	1	4	0	3	2.0	11/22
Subcontract Principal (including foster father)	17	0	0	2	3	1.8	6/22
Industry Association/ NGO	17	1	2	1	2	1.7	10/23
Materials Supplier	16	1	5	1	0	1.6	11/23
Similar Firms	13	2	1	3	1	1.6	9/20
Local Buyers	23	0	0	0	0	1.0	2/23
Joint Venture Partner	21	0	0	1	0	1.1	2/22
Private Consultants	22	0	0	0	1	1.2	2/23
Expatriate Employees	23	0	0	0	0	1.0	0/23
Public Technology Agents	20	2	0	1	0	1.1	6/23
Product Standards Agency	23	0	0	0	0	1.0	0/23

TABLE 19
SOURCES OF SUPPORT FOR UPGRADING TECHNOLOGICAL CAPABILITY IN SPECIFIC AREA OF EXPORT FURNITURE FABRICATION

	Design	Finishing	Construction	Wood Drying
Buyers	15	10	4	5
Literature	7	0	1	1
Foster Father Principal	3	0	3	0
Similar Firms	2	1	3	2
Materials Suppliers	0	8	0	0
Public or NGO Support Agencies	0	7	2	6
Joint Venture Partner	0	0	0	1
Number of Respondents	18	14	9	10

TABLE 20
RELATIVE IMPORTANCE OF DIFFERENT FACTORS IN THE TECHNOLOGICAL CAPABILITY OF GARMENT FIRMS IN THE INITIAL PERIOD OF DIRECT ENTRY INTO EXPORT MARKETS AND OVER THE LIFE OF THE FIRM

Factor		Initial Export Entry			Lifetime of Firm		
		Average Score	Percentage of Firms Assigning a Score of		Average Score	Percentage of Firms Assigning a Score of	
			4	5		4	5
Support from Other Provides External to the Firm	T	3.7	30.4	30.4	3.7	39.4	26.1
	P	3.7	0.0	66.7	3.5	33.3	16.7
	NP	3.6	38.9	16.7	3.7	40.7	20.8
Entrepreneur/Owner's Prior Skills	T	3.2	13.1	34.8	3.0	18.2	18.2
	P	2.3	0.0	33.3	2.7	16.7	16.7
	NP	3.2	11.1	38.9	3.5	20.8	20.8
Domestic Employees Prior Skills	T	3.5	21.7	30.4	2.7	24.2	3.0
	P	3.7	33.3	33.3	2.7	33.3	0.0
	NP	3.5	16.7	33.3	2.7	16.7	4.2
On-the-Job Learning by Employees and Entrepreneur	T	3.0	8.7	30.4	4.1	12.9	58.1
	P	2.6	0.0	33.3	4.3	16.7	66.7
	NP	3.3	11.1	33.3	4.2	13.0	60.9

TABLE 21
USEFULNESS TO GARMENT FIRMS OF THE TECHNICAL SUPPORT OF VARIOUS PROVIDERS

Sources		1	2	3	4	5	All	Score
Foreign Buyers	T	8	5	5	8	6	32	3.0
	P	2	1	0	2	1	6	2.8
	NP	5	4	5	5	4	23	3.0
Expatriate Employees	T	15	3	0	2	12	32	2.8
	P	5	1	0	0	0	6	1.2
	NP	9	2	0	2	10	23	3.0
Local Buyers	T	26	3	2	0	1	32	1.3
	P	3	2	1	0	0	6	1.7
	NP	20	1	1	0	1	23	1.3
Equipment Suppliers	T	14	5	10	1	2	32	2.1
	P	2	0	2	0	2	6	3.0
	NP	11	4	7	1	0	23	1.9
	0-100	3	0	1	0	1	5	2.2
	101-250	2	1	2	0	1	6	2.5
	251-500	3	1	5	1	0	10	2.4
	>500	6	3	2	0	0	11	1.5
Subcontractor Principals	T	19	3	4	2	2	30	1.8
	P	1	0	2	2	1	6	3.3
	NP	16	3	2	0	1	22	1.5
Firms in Similar Activities	T	11	4	6	7	4	32	2.7
	P	0	0	2	3	1	6	3.8
	NP	9	4	4	3	3	23	2.4
	0-100	0	2	1	2	0	5	3.0
	101-250	1	1	1	2	1	6	3.2
	251-500	3	0	2	2	3	10	3.2
	>500	7	1	2	1	0	11	1.7
Technical Literature	T	12	9	4	6	1	32	2.2
	P	2	3	1	0	0	6	1.8
	NP	9	6	3	5	0	23	2.2
Joint Venture Partner	T	27	1	2	1	1	32	1.4
	P	6					6	0.0
	NP	19	1	1	1	1	23	1.4

Source: Survey of garment firms.

TABLE 22
USE OF EXPATRIATES, BY SIZE OF GARMENT FIRM, ETHNIC GROUP AND YEAR OF FOUNDING

		Current Size of Firm (Number of Workers)					
		1-100	101-250	251-500	501-999	>1000	All
Proportion of Firms Employing Expatriates	T[a]	0/5	3/6	8/10	2/3	8/8	21/32
	P[b]	0/3	0/1	1/2	0/0	0/0	0/0
	NP[c]	0/2	3/5	7/8	2/3	8/8	20/26
Ratio of Expatriates per 100 Workers	T	0.00	0.24	0.50	0.63	0.49	
	P	0.00	0.00	0.18	0.00	0.00	
	NP	0.00	0.00	0.55	0.63	0.49	

[a] Total
[b] Pribumi
[c] Non-pribumi

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